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The seven hundred and sixtieth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London S.W.7 on Tuesday, 24 September 1985 at 7 pm. The attendance was 29 Members and 18 guests.

Members present were: B. GRAY (*Chairman*), Dr J. S. ASH, N. BAKER, P. J. BELMAN, K. F. BETTON, Mrs DIANA BRADLEY, D. R. CALDER, R. D. CHANCELLOR, Dr N. J. COLLAR, P. J. CONDER, R. F. COOMBER, A. K. DAVIES, J. H. ELGOOD, Sir HUGH ELLIOTT, G. D. FIELD, A. GIBBS, Dr J. J. D. GREENWOOD, S. HOWE, Revd G. K. McCULLOCH, Dr J. F. MONK, Mrs AMBERLEY MOORE, R. E. F. PEAL, R. E. SHARLAND, S. A. H. STATHAM, N. H. F. STONE, Dr S. N. STUART, A. TYE, Prof Dr K. H. VOOUS and M. W. WOODCOCK.

Guests present were: J. S. ARMITAGE, Dr CAROLINE ASH, Mrs J. W. ASH, J. BEESLEY, T. J. DEE, Mrs D. HOWE, Sir ANTHONY and Lady LAMBERT, Mrs I. McCULLOCH, Dr AMICIA MELLAND, Mrs D. C. MONK, P. J. MOORE, T. J. SIMMS, Dr and Mrs V. R. SOUTHGATE, Mrs H. TYE, Mrs VOOUS-LUITING and Mrs B. J. WOODCOCK.

After the Hon. Secretary had welcomed Dr Amicia Melland and spoken of the considerable assistance and co-operation which the club had received during her 15 years with the British Ornithologists' Union, the Chairman presented her with a cheque with the good wishes of the Club on her retirement as Administrative Secretary of the Union.

Dr N. J. Collar and Dr S. N. Stuart then spoke on Threatened Bird Species in Africa. Dr Stuart discussed forest birds and Dr Collar other threatened species. It was pointed out that most of the 177 species in their *Threatened Birds of Africa and Related Islands* (1985) were forest birds. Among the excellent slides shown were two first photographs ever of the Yellow-bellied Sunbird-asisity *Neodrepanis hypoxantha*. The many points raised by the speakers brought out a wide discussion.

The seven hundred and sixty-first Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London S.W.7 on Tuesday, 15 October 1985 at 7 pm. The attendance was 18 Members and 11 guests.

Members present were: B. GRAY (*Chairman*), Mrs DIANA BRADLEY, P. A. BROWN, D. R. CALDER, T. J. CHRISTMAS, A. K. DAVIES, J. H. ELGOOD, D. GRIFFIN, Dr C. N. HACKING, R. H. KETTLE, J. KING, Revd. G. K. McCULLOCH, Mrs AMBERLEY MOORE, R. E. F. PEAL, N. H. F. STONE, A. R. TANNER, K. V. THOMPSON and A. TYE.

Guests present were: Dr J. D. BRADLEY, Miss SUE BUTCHER, Mrs G. L. HACKING, Miss J. E. HACKING, N. JONES, Mrs ISABEL McCULLOCH, P. J. MOORE, A. J. RANDALL, M. R. RIDDELL, Dr M. E. RODDIE and Mrs HILARY TYE.

Mr A. J. Randall gave an address on The Birds of the Cape Verde Islands. He spoke particularly on information gathered by a party, of which he was a member, which had visited many of these little-known islands in February 1985. Among the many interesting slides shown were some of the Raso Lark (*Alauda razae*) and of a breeding site on Fogo of the Gon-gon (*Pterodroma feae*).

Nests of three Andean hummingbird species

by David A. Wiedenfeld

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While in Peru from February to April 1982, F. P. Bennett, Jr., and I located 5 nests of 3 hummingbird species: the Shining Sunbeam *Aglaeactis cupripennis*, the Collared Inca *Coeligena torquata* and the Amethyst-throated Sunangel *Heliangelus amethysticollis*. *C. torquata* and *H. amethysticollis* are both

widespread cloud forest species, whereas *A. cupripennis* inhabits drier slopes of the Andes. Although all 3 species are common birds in their habitats, because of the inaccessibility of those habitats almost nothing is known of their nests and eggs. I report here descriptions of the nests and the micro-habitats in which they are placed. The nests were encountered while conducting general ornithological research with an expedition from the Louisiana State University Museum of Zoology (LSUMZ).

Aglaeactis cupripennis

Two nests were found on 22 April 1982 in *Polylepis* (Rosaceae) woodland c. 13 km west of Milloc, Dpto. Lima, Peru (11° 21' S, 76° 43' W). This locality is on a steep slope of the upper Santa Eulalia valley (see Parker 1981). *Polylepis* spp. are the only trees in the area and are interspersed with shrubs and grassland.

Both nests were found in *Polylepis* trees, at 3925 m, in a narrow, steep-sided ravine. They were within 200 m of one another, and one was collected (LSUMZ-DW 1381). This nest was near the end of one of the lower branches of a tree growing from the side of the ravine. It was attached to and on top of a branch c. 3 cm in diameter, c. 5 m above the bottom and 3 m from the side of the ravine. The second nest (LSUMZ-DW 1383) was at a slightly lower elevation, 3900 m, c. 2.5 m above ground near the end of a branch of a *Polylepis* tree growing in the bottom of the ravine.

The nests were similarly constructed, both being roughly circular, measuring c. 2.5 x 3 cm inside the cup and 6.5 x 7 cm outside, the cups being c. 3 cm deep. They were formed of a fine greenish moss held together with spider webs, with small pieces of white lichen of the kind found growing on the *Polylepis* trees attached to the outside of the nests. Some green and a few dry, brown *Polylepis* leaves also were bound to the nests with spider web. The second nest (LSUMZ-DW 1383) had fewer brown *Polylepis* leaves attached to it, giving it more of an overall greenish appearance. The cups of both nests were lined with soft, white, wool-like fibre, apparently of plant origin; but the local people herd both llamas and sheep in the area, so it may have been from an animal source.

Two pure white eggs were in each nest, but only one of each clutch survived to measuring: 16.1 x 10.3 mm and 16.6 x 10.6 mm.

Coeligena torquata

Two nests of this species were located within a few hundred metres of one another at Cumbre de Ollon, c. 12 km east of Oxapampa, Dpto. Pasco, Peru (10° 34' S, 75° 19' W), at 2500 m. This is a cloud forest locality at the top of a ridge of the Yanachaga Range. The average canopy height is c. 15 m. Epiphytes are very common, and moss covers almost every branch of the trees (Schulenberg *et al.* 1984). Both nests were located alongside an unpaved and rarely frequented road used by local lumbermen. Both were c. 2 m above the level of the road and built around roots or stems hanging down from the road-cut bank, affording both nests much protection from rain.

The first nest (LSUMZ-DW 1233), collected on 22 March 1982, was sheltered by fern fronds that hung down and outward from the top of the road-cut. The nest itself was suspended by bare, dead stems of the same fern, which also hung down from the top of the road-cut.

The second nest (LSUMZ-DW 1277), located and collected on 29 March 1982, was suspended by small roots (0.5 cm in diameter) growing from the bottom side of an overhang of the road-cut.

Both nests were of similar construction, which consisted of a tightly-formed cup, surrounded by a loose, camouflaging sheath. The cups, more or less circular, measured c. 3 cm in inside diameter and 5.5-6 cm outside, with an inner depth of 3-3.5 cm. The cups were formed of soft, fine, brown fibres, probably of plant origin, possibly from tree-fern fiddleheads, since I have seen a female Booted Racket-Tail *Ocreatus underwoodi* collecting such material at the Santa Cruz locality (see next account). The cups were held together with spider web. Outside the cup, from the outer edge and hanging below it, the sheath was of fine, yellowish-green moss, with a few dried fern leaves in the lower parts.

Two fresh, pure white eggs were taken from each nest. Measurements of the one remaining egg from nest LSUMZ-DW 1233 are 16.3 x 10.3 mm, and of both eggs from nest LSUMZ-DW 1277 are 16.2 x 9.9 mm and 16.2 x 9.8 mm. Only female *Coeligena torquata* were seen at either nest, and both were incubating when the nests were collected.

Heliangelus amethysticollis

The nest of this species was found during its construction on 27 February 1982 and collected with one egg on 7 March 1982 (LSUMZ-DW 1155). Unfortunately, the nest had to be collected on the first day an egg was present, probably before laying was completed, since time was not available to wait for the full clutch.

The nest was located very near the top of the ridge, at 2450 m, on the west side of the Rio Santa Cruz valley, above our camp (Santa Cruz, c. 9 km SSE of Oxcapampa, Dpto. Pasco, Peru, 10° 37' S, 75° 20' W). The species was not seen much lower than this elevation during our stay at Santa Cruz, but was common at the higher altitudes of Cumbre de Ollon. The habitat and weather around the nest are very similar to those described for Cumbre de Ollon (Schulenberg *et al.* 1984).

The nest was built near the midpoint of a 1 m-long strand of moss hanging from a low tree, sheltered from rain by a clump of moss in the strand directly above the nest. The outer sheath of the nest was constructed of the same moss as the strand and the whole structure appeared merely as a slight irregularity in the hanging strand; it would not have been noticed had the female not been observed bringing material to it. The nest, c. 1.5 m above the ground and c. .75 m below the branch supporting the moss strand, was constructed in a manner similar to that of the *C. torquata* nests, with an inner cup and outer sheath. The cup was made of fibres similar to those in the *C. torquata* nests, but much lighter in colour, being a yellowish- to greenish-brown. The cup was slightly oval, c. 3 x 2.5 cm and c. 3.25 cm deep. The sheath of the nest was quite different from that of the *C. torquata* nests, being composed of browner moss, with more detritus included, to match the moss strand, but also had some of the same fine, yellowish-green moss. The sheath covered the entire outside of the cup, including the top, up to the inner rim of the cup. As a result, only the inside of the cup could be seen. The *C. torquata* nests, in contrast, had the sheath covering only the sides and bottom, so that the top and inside of the cup were both visible.

The egg was very fresh, probably laid on 6 March or early on 7 March 1982. It is pure white and measures 15.3 x 9.0 mm. Only the female was seen at the nest.

DISCUSSION

Dorst (1962), Horvath (1964), Smith (1969), Calder (1973, 1974), Carpenter (1976) and Snow (1980) have all noted that hummingbirds place their nests to take advantage of micro-climatic effects. Smith (1969) especially noted that *Oreotrochilus estella chimborazo* always seemed to place its nest in locations protected from rain by an overhang. The *Coeligena torquata* and *Heliangelus amethysticollis* nests reported in this paper also seem to seek the same protection. A more adequate sample size of the nests of these hummingbirds, however, is needed to test the hypothesis that their nests are placed to take advantage of shelter from the frequent rains in the cloud forest.

In contrast, the *Aglaeactis cupripennis* nests were in an area with much less precipitation than the other 3 nests. The nest studied by Calder (1974) was in a very similar situation to our *A. cupripennis* nests. Calder concluded that his nest was positioned to take advantage of the temperature amelioration effect of the canyon's rock walls, and that it was protected by the tree's foliage from the cold night sky. Dorst (1962), Smith (1969), Carpenter (1976) and Snow (1980) all reached similar conclusions about the nests they observed.

Because hummingbirds are small, temperature and precipitation can affect their energetics greatly. To alleviate some of these effects, the hummingbird nests reported in this paper appear to be located to take advantage of less rigorous micro-climates in their rigorous habitat.

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References:

- Calder, W. A. 1973. Micro-habitat selection during nesting of hummingbirds in the Rocky Mountains. *Ecology* 54: 127-134.
 — 1974. The thermal and radiant environment of a winter hummingbird nest. *Condor* 76: 268-273.
 Carpenter, F. L. 1976. Ecology and evolution of an Andean hummingbird (*Oreotrochilus estella*). *Univ. Calif. Publ. Zool.* 106: 1-74.
 Dorst, J. 1962. Nouvelles recherches biologiques sur les Trochilides des hautes Andes peruvienne (*Oreotrochilus estella*). *Oiseau* 32: 95-126.
 Horvath, O. 1964. Seasonal differences in Rufous Hummingbird nest height and their relation to nest climate. *Ecology* 45: 235-241.
 Parker, T. A., III. 1981. Distribution and biology of the White-cheeked Cotinga *Zaratornis stresemanni*, a high Andean frugivore. *Bull. Brit. Orn. Cl.* 101: 256-265.
 Schulenberg, T. S., Allen, S. E., Stotz, D. F. & Wiedenfeld, D. A. 1984. Distributional records from the Cordillera Yanachaga, central Peru. *Gerfaut* 74: 57-70.
 Smith, G. T. C. 1969. A high altitude hummingbird on the volcano Cotopaxi. *Ibis* 111: 17-22.
 Snow, B. K. 1980. The nest and territoriality of a female Tyrian Metaltail. *Wilson Bull.* 92: 508-509.

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